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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,664	10/29/2003	Terry Hildreth	117.0002-00000	8387
22882	7590	08/24/2007	EXAMINER	
MARTIN & FERRARO, LLP			LIN, KUANG Y	
1557 LAKE O'PINES STREET, NE				
HARTVILLE, OH 44632			ART UNIT	PAPER NUMBER
			1725	
			MAIL DATE	DELIVERY MODE
			08/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,664	HILDRETH, TERRY	
	Examiner	Art Unit	
	Kuang Y. Lin	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 August 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 and 23-43 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 and 23-43 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

1. Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This claim recites the limitation of "in combination with a plunger tip and a plunger rod". However, the base claim claims "a adaptor". Thus, it is not clear what scope is claimed.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 23-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steininger et al. for the same reasons as set forth in the last office action.

Namely, Steininger et al. substantially show the invention as claimed (see figure 2, the combination of body (15), ball end (39), shank end (43) and fitting (37) or each individual part of these is considered to be an adapter) except that they do not disclose whether the adapter is made of beryllium copper. However, in col. 4, line 14+ of the patent, it discloses that the cup shape piston head is preferably made of beryllium copper alloy. It would have been obvious to make every part of the piston with same material (i.e. beryllium copper) such that they all have the same thermal expansion coefficient and thereby to obtain a better joint between parts during the casting cycle. Also, it would have been obvious to make the

adapter with beryllium copper alloy in view of its combination properties of excellent thermal conductivity and mechanical strength.

4. Applicant's arguments filed August 6, 2007 and August 16, 2007 have been fully considered but they are not persuasive.

a. In page 7 of the amendment as well as in the declaration applicant stated that the properties of beryllium copper foreclosed on its consideration for the "ball and socket" adapter of the Steininger reference. However, it is not clear what properties of beryllium copper applicant referred to and why those properties foreclosed on its consideration for the "ball and socket" adapter.

b. In paragraph 4 of the declaration it stated that components used in the die casting industry are exposed to significant forces and pressures, and, because of such exposures used in the die casting industry are susceptible failure.

Notwithstanding the stated fact, Steininger et al. do show to use beryllium copper for making the plunger tip. If the tip (71), which contacts molten metal directly and thus experiences more severe environment, can be made of beryllium copper alloy, there is no reason why the adapter (15, 37, 39, 43), which experiences less severe environment, can not be made of beryllium copper alloy.

c. The declaration mentioned that "ball and socket" adapter of Steininger et al. was made of stainless steel and that harder material, such as forged steels, for making the adapter was discussed. However, there is no evidence to support the allegation.

d. Applicant in page 7 of the amendment further stated that in figure 2 of Steininger et al. the adapter is not configured to maintain the distal end and the proximal end in fixed relationship to one another. However, in Steininger et al. the adapter does maintain the plunger tip and the plunger rod in fixed relationship to one another and to the adapter once those elements are assembled. Further, the ball and shank (39, 43) alone can be considered as an adapter. Thus, the distal end (39) and the proximal end (43) are in fixed relationship to one another.

5. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan J. Johnson can be reached on 571-272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner
Art Unit 1725